

CUSTOMER NO.: 24498  
Serial No.: 10/573,928  
Final Office Action Dated: December 22, 2008  
Advisory Action Dated: March 2, 2009

RECEIVED  
CENTRAL FAX CENTER  
JUL 30 2009

PATENT  
PU030162

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**Before the Board of Patent Appeals and Interferences**

Applicants: Christina Gomila et al. : Examiner: Tung T. Vo  
Serial No: 10/573,928 : Art Unit: 2621  
Filed: March 30, 2006 :  
For: DIRECT MODE DERIVATION PROCESS  
FOR ERROR CONCEALMENT

**APPEAL BRIEF**

Mail Stop: Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

May It Please The Honorable Board:

Applicants hereby re-submit their Brief on Appeal, now corrected to address the objections raised in the Notification of Non-Compliant Appeal Brief, mailed July 6, 2009. In particular, applicants have now re-written the Status of Claims Section to indicate that the dependent claims rise and fall with their corresponding independent claim. Further, the Grounds for Rejection Section now recites the grounds for rejection.

**TOTAL PAGES: 19**

**CERTIFICATE OF TRANSMISSION**

I hereby certify that this correspondence is being transmitted, Via Facsimile, to the United States Patent and Trademark Office, Mail Stop: Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

*July 30, 2009*  
Date

*Patricia M. Fedorowycz*  
Patricia M. Fedorowycz

**CUSTOMER NO.: 24498****Serial No.: 10/573,928****Final Office Action Dated: December 22, 2008****Advisory Action Dated: March 2, 2009****PATENT****PU030162****TABLE OF CONTENTS:**

	<b><u>Page No.</u></b>
1. Real Party in Interest	3
2. Related Appeals and Interferences	3
3. Status of Claims	3
4. Status of Amendments	3
5. Summary of Claimed Subject Matter	3 - 4
6. Grounds of Rejection for Review on Appeal	5
7. Argument	5
A. Introduction	5 - 6
B. Claims 1-17 are not anticipated under 35 U.S.C. § 102(e) by U.S. Patent Publication No. 2006/0051068 to Gomila (hereinafter "Gomila").	6 - 7
I. Claims 1-17	7 - 8
II. Claims 1-9	8 - 9
III. Claims 6 and 16	9 - 10
C. Claims 1-17 are non-obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 6,489,996 to Matsumura et al. (hereinafter "Matsumura") in view of U.S. Patent No. 7,003,035 to Tourapis et al. (hereinafter "Tourapis").	10 - 11
I. Claims 1-17	11 - 12
II. Claims 6 and 16	13
D. Conclusion	14
8. CLAIMS APPENDIX	15 - 17
9. RELATED EVIDENCE APPENDIX	18
10. RELATING PROCEEDINGS APPENDIX	19

**CUSTOMER NO.: 24498****Serial No.: 10/573,928****Final Office Action Dated: December 22, 2008****Advisory Action Dated: March 2, 2009****PATENT****PU030162****1. Real Party in Interest**

The real party in interest is THOMSON LICENSING S.A., the assignee of the entire right, title, and interest in and to the subject application by virtue of an assignment recorded with the Patent Office on March 30, 2006 at Reel/Frame 017764/0235.

**2. Related Appeals and Interferences**

None.

**3. Status of Claims**

Claims 1–17 are pending. Claims 1–17 stand rejected and are the subject of this appeal.

A copy of the Claims 1–17 appears in the Claims Appendix in Section 8 below.

Regarding the grouping of the Claims with respect to the various rejections, Claims 2–9 stand or fall with Claim 1, and Claims 11–17 stand or fall with Claim 10.

**4. Status of Amendments**

The United States Patent and Trademark Office issued a Final Office Action mailed January 8, 2009. Applicants filed a response under 37 C.F.R. 1.116(b) without making any amendments on February 17, 2009. Thereafter, United States Patent and Trademark Office issued an Advisory Action March 2, 2009.

**5. Summary of Claimed Subject Matter**

Independent Claim 1 recites a method for temporal concealment of at least one of a missing or corrupted macroblocks in a video stream coded in direct mode. *See* page 1, lines 6–7 of the specification.

The subject matter of the first element of Claim 1, beginning with “identifying,” finds support in applicants’ specification at page 2, lines 31–32.

The subject matter of the second element of Claim 1, beginning with “finding,” finds support in applicants’ specification at page 2, lines 32–34.

The subject matter of the third element of Claim 1, beginning with “determining,” finds support in applicants’ specification at page 2, lines 32–34.

**CUSTOMER NO.: 24498****Serial No.: 10/573,928****Final Office Action Dated: December 22, 2008****Advisory Action Dated: March 2, 2009****PATENT****PU030162**

The subject matter of the fourth element of Claim 1, beginning with "scaling," finds support in applicants' specification at page 2, line 34, and page 3, lines 1-3.

The subject matter of the fifth element of Claim 1, beginning with "predicting," finds support in applicants' specification at page 3, lines 3-5.

Independent Claim 10 recites a method for temporal concealment of at least one missing or corrupted macroblocks in a video stream coded in direct mode in accordance with the ISO/ITU H.264 coding standard. *See* page 3, lines 8-10 of the present specification.

The subject matter of the first element of Claim 10, beginning with "identifying," finds support in applicants' specification at page 3, line 11.

The subject matter of the second element of Claim 10, beginning with "finding," finds support in applicants' specification at page 3, lines 12-14.

The subject matter of the third element of Claim 10, beginning with "determining," finds support in applicants' specification at page 3, lines 12-14.

The subject matter of the fourth element of Claim 10, beginning with "scaling," finds support in applicants' specification at page 3, lines 14-15.

The subject matter of the fifth element of Claim 10, beginning with "selecting," finds support in applicants' specification at page 3, lines 15-18.

The subject matter of the sixth element of Claim 10, beginning with "predicting," finds support in applicants' specification at page 3, lines 15-18.

Dependent Claim 6 depends from independent Claim 1.

The subject matter of the first element of Claim 6, beginning with "performing," finds support in applicants' specification at page 9, lines 33-34.

The subject matter of the second element of Claim 6, beginning with "selecting," finds support in applicants' specification at page 9, line 34 and page 10, line 1.

Dependent Claim 16 depends from independent Claim 10. The subject matter of the first element of Claim 16, beginning with "performing," finds support in applicants' specification at page 4, lines 28 through page 6, line 37 and page 9, lines 33-34.

The subject matter of the second element of Claim 16, beginning with "selecting," finds support in applicants' specification at page 9, line 34 and page 10, line 1.

**CUSTOMER NO.:** 24498  
**Serial No.:** 10/573,928  
**Final Office Action Dated:** December 22, 2008  
**Advisory Action Dated:** March 2, 2009

**PATENT**  
**PU030162**

**6. Grounds of Rejection to be Reviewed on Appeal**

Claims 1–17 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. 2006/0051068 to Gomila (hereinafter “Gomila”).

Claims 1–17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,489,996 to Matsumura et al. (hereinafter “Matsumura”) in view of U.S. Patent No. 7,003,035 to Tourapis et al. (hereinafter “Tourapis”).

**7. Argument**

**A. Introduction**

In general, the present invention concerns a direct mode derivation process for error concealment. (See Applicants' specification, Title). As disclosed in the applicants' specification on page 1, lines 24–34 and page 2, lines 1–17:

“Present day temporal concealment strategies typically accept sub-optimal solutions that minimize computational effort to reduce complexity and increase speed. Such sub-optimal solutions typically fall into two categories depending on whether they make use of spatial neighbors (within the same frame) or temporal neighbors (within other frames) to infer the value of the missing motion vector. Error concealment that makes use of spatial neighbors attempts the recovery of the motion vector of a missing block based on the motion information within the neighborhood. Such techniques assume a high correlation between the displacement of spatially neighboring blocks. When considering several motion vectors, the best candidate is found by computing the least MSE (Mean Square Error) between the external border information of the missing/corrupted block in the current frame and the internal border information of the concealed block from the reference frame. Such a procedure tends to maximize the smoothness of the concealed image at the expenses of an increased amount of computational effort. Faster algorithms compute the median or the average of the adjacent motion vectors, and propose this value as the motion vector of the missing block.

“The other sub-optimal solution for error concealment makes use of temporal neighboring macro blocks. This approach attempts the recovery of the motion vector of a missing block by exploiting the temporal correlation between co-located blocks in neighboring frames. Typically, techniques that make use of temporal neighboring macroblocks assume that the lost block hasn't changed its location between two consecutive frames, which is equivalent to saying that the block's displacement can be modeled with a zero motion vector. On that basis, the temporal concealment of a missing block on the current frame occurs by simply copying the co-located block of the previously transmitted frame. Such a procedure affords speed and simplicity

**CUSTOMER NO.: 24498**  
**Serial No.: 10/573,928**  
**Final Office Action Dated: December 22, 2008**  
**Advisory Action Dated: March 2, 2009**

**PATENT**  
**PU030162**

but achieves low performance on moving regions. Similar strategies exist in recently proposed video-coding standards to derive the motion vectors of a block for which no motion information has been transmitted, but offer limited performance.

"Thus, there is a need for a technique for temporal concealment of lost/corrupted macroblocks that overcomes the aforementioned difficulties."

Advantageously, the present principles provide methods for error correction (Claims 1 and 12) which address these problems.

The Claims of the pending invention include novel features not shown in the cited references. These features provide advantages over the prior art and dispense with prior art problems such as those described above with reference to Applicant's specification.

Applicants respectfully assert that independent Claims 1 and 10 patentably distinguish obvious over the cited references in their own right. For example, the below-identified limitations of independent Claims 1 and 10 do not appear in any cited reference, either taken singly or in combination. Moreover, Claims 1 and 10 remain distinct from each other in that they concern different implementations and/or include different limitations. For example, Claim 10 recites a "selecting" step not recited in Claim 1. Accordingly, each of independent Claims 1 and 10 represent separate features/implementations of the invention that are novel and non-obvious with respect to the prior art and to the other Claims. As such, independent Claims 1 and 10 are separately patentable and are each presented for review in this appeal.

**B. Claims 1-17 are not anticipated under 35 U.S.C. § 102(e) by U.S. Patent Publication No. 2006/0051068 to Gomila (hereinafter "Gomila").**

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (MPEP § 2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987)).

The Examiner rejected Claims 1-17 as anticipated by Gomila. The Examiner contends that the cited published application shows all the features recited in Claims 1-17.

The Gomila published application concerns a "decoder apparatus and method for smoothing artifacts created during error concealment." (Gomila, Title). In further detail, Gomila discloses the following in the abstract:

CUSTOMER NO.: 24498

Serial No.: 10/573,928

Final Office Action Dated: December 22, 2008

Advisory Action Dated: March 2, 2009

PATENT

PU030162

"Errors in coded macroblocks are concealed during decoding by way of an error concealment stage present in a decoder. Error-concealed macroblocks produced by the error concealment stage undergo deblocking filtering by a deblocking filter before being output by the decoder to avoid the spread of erroneous pixel values. The error concealment stage controls the deblocking filter in accordance with the error concealment technique to vary the strength of the deblocking filter to force maximum strength on transitions artificially created by the recovery of lost macroblocks."

As discussed below, the features of Claims 1-17, reproduced herein, do not appear in the cited Gomila publication. and that Claims 1-17 patentably distinguish thereover.

**I. Claims 1-17**

Claim 1 recites, *inter alia*:

"scaling the determined co-located motion vector...".

Claim 10 recites, *inter alia*:

"scaling the motion vector;"

In the Final Office Action, the Examiner asserted that Gomila discloses applicants scaling step in paragraphs [28]-[30] of the cited publication. However, those paragraphs only discuss possible motion vectors. Gomila does not discuss or suggest the possibility of scaling the motion vectors anywhere in paragraphs [28]-[30] nor anywhere in the reference.

The Examiner asserted in the Advisory Action that, "Local motion is inherently calculating motion of neighboring blocks based on the global motion in accordance the ISO/ITU H.264 compression/decompression standard." However, the Examiner has not addressed the issue of whether Gomila discusses scaling of motion vectors. If the Examiner intended to refer to the H.264 standard to support the rejection, the Examiner had ample opportunity to cite the standard as prior art. Gomila, standing on its own, does not disclose or suggest scaling motion vectors.

**CUSTOMER NO.: 24498****Serial No.: 10/573,928****Final Office Action Dated: December 22, 2008****Advisory Action Dated: March 2, 2009****PATENT****PU030162**

Claim 1 further recites the following,

“predicting the at least one missing or corrupted data for the identified macroblock by motion compensating data from both the first previously transmitted picture and a second previously transmitted reference picture in accordance with the scaled co-located motion vector,”

Claim 10 further recites the following:

“predicting the at least one missing or corrupted data for the identified macroblock by motion compensating data from the first and second previously transmitted reference pictures in accordance with the determined and scaled motion vector.”

The Examiner asserts that Gomila discloses prediction of missing data in the motion compensation block 16. However, as noted above, Gomila never scales motion vectors at all. As such, Gomila does not disclose or suggest predicting data for a macroblock in accordance with such a scaled motion vector.

In order to anticipate a claim, the reference must disclose each and every claim element. As such, applicants respectfully assert that Gomila fails to disclose or suggest, implicitly or explicitly, the above-recited limitations of Claims 1 and 10, and by placation, claims 2-9 and 11-17, respectively. Accordingly, Claims 1-17 are patentably distinct and non-obvious over Gomila for at least the reasons set forth above. Therefore, applicants request reversal of the 35 U.S.C. 102(e) rejection of Claims 1-17.

## **II. Claims 1-9**

As discussed above with respect to the 35 U.S.C. 102(e) rejection of claims 1-17, Claim 1 recites, *inter alia*: “scaling the determined co-located motion vector in accordance with a picture distance.” In rejecting applicants’ claim 1, the Examiner asserts that “there is a distance between the reference frame indices sent in the input bit-stream and corresponding reference frames previously stored in the decoder buffer.” However, as noted previously, Gomila does not disclose or suggest scaling motion vectors at all. Therefore, the Gomila published application cannot possibly disclose or suggest scaling such vectors in accordance with a picture distance. Although the Examiner is correct inasmuch as there will exist a picture distance between any two stored frames in a sequence, Gomila does not so much as

CUSTOMER NO.: 24498  
Serial No.: 10/573,928  
Final Office Action Dated: December 22, 2008  
Advisory Action Dated: March 2, 2009

PATENT  
PU030162

acknowledge the usefulness of that information, let alone teach using picture distance in scaling motion vectors.

The Gomila published application cannot anticipate claim 1 because the reference does not describe each and every claim element. In this regard, Gomila fails to disclose or suggest, implicitly or explicitly, the feature of scaling in accordance with a picture distance recited in claim 1 and incorporated by reference in claims 2-9. Accordingly, Claims 1-9 patentably distinguish over the Gomila publication for at least the reasons set forth above. Applicants request reversal of the rejection of Claims 1-9.

### III. Claims 6 and 16.

Claim 6 directly depends from independent Claim 1 and incorporates by reference all of the features of its base claim. Claim 16 directly depends from independent Claim 10 and incorporates by reference all of the features of its base claim. Applicants respectfully assert that Gomila fails to teach or suggest the following limitations of Claims 6 and 16:

“selecting results of one of the temporal and spatial-direct modes derivation processes in accordance with at least one a *posteriori* criterion.”

The Examiner asserted in the Final Office Action that Gomila discloses this element in paragraphs 26 and 27. However, those paragraphs discuss spatial and temporal processes separately and do not discuss selecting the results of one or the other. In paragraph 31, Gomila states further:

“Following *either* spatial error concealment during step 160 *or* temporal concealment during step 180, the error concealment stage 20 of FIG. 1 adjusts the parameters of the deblocking filter 22” (emphasis added).

Gomila never discloses or suggests conducting both temporal *and* spatial processes, and as a result, never discloses or suggests selecting between their results in accordance with an *a posteriori* criterion. Indeed, Gomila neither discloses or suggests any such criterion anywhere in the reference.

CUSTOMER NO.: 24498  
Serial No.: 10/573,928  
Final Office Action Dated: December 22, 2008  
Advisory Action Dated: March 2, 2009

PATENT  
PU030162

In response to this argument, the Examiner asserted in the Advisory Action that Gomila's Decoder Control discloses intra-mode prediction in accordance with at least one *a posteriori* criterion. The Examiner provided no reasoning to support this assertion. In fact, the Gomila published application provides no discussion of the Decoder Control.

The Gomila published application does not anticipate claims 6 and 16 because the references fails to each and every element of claims 6 and 16 since the reference does not teach the feature of selecting results of one of the temporal and spatial-direct modes derivation processes in accordance with at least one *a posteriori* criterion. Accordingly, Claims 6 and 16 patentably distinguish over the art of record. Applicants request reversal of the 35 U.S.C. 102(e) rejection of claims 6 and 16.

C. Claims 1-17 are non-obvious under U.S.C. § 103(a) over U.S. Patent No. 6,489,996 to Matsumura et al. (hereinafter "Matsumura") in view of U.S. Patent No. 7,003,035 to Tourapis et al. (hereinafter "Tourapis").

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." (MPEP §2143.03, citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)). "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

The Examiner rejected Claims 1-17 as being unpatentable over Matsumura in view of Tourapis. The Examiner contends that the cited combination shows all the limitations recited in Claim 1-17.

Matsumura concerns a "moving-picture decoding method and apparatus calculating motion vectors to reduce distortion caused by error propagation." (Matsumura, Title). In further detail, Matsumura discloses the following in the Abstract:

**CUSTOMER NO.: 24498****Serial No.: 10/573,928****Final Office Action Dated: December 22, 2008****Advisory Action Dated: March 2, 2009****PATENT****PU030162**

"TA moving picture coded by inter-frame coding, with motion compensation, is decoded by an apparatus that stores at least two previously decoded frames, together with information identifying any erroneous parts of the previously decoded frames. The current frame is decoded with reference to a predicted frame assembled from decodable parts of the previous frames. When a motion vector points to a non-decodable part of a previous frame, it is extended farther back to a decodable part of an earlier frame. The extension can be made linearly, or by using previous motion vectors. Picture distortion caused by error propagation is thereby reduced."

Tourapis concerns a "video coding methods and apparatuses." (Tourapis, Title). In further detail, Tourapis discloses the following in the Abstract:

"Video coding methods and apparatuses are provided that make use of various models and/or modes to significantly improve coding efficiency especially for high/complex motion sequences. The methods and apparatuses take advantage of the temporal and/or spatial correlations that may exist within portions of the frames, e.g., at the Macroblocks level, etc. The methods and apparatuses tend to significantly reduce the amount of data required for encoding motion information while retaining or even improving video image quality."

As discussed hereinafter, the features of Claims 1-17 reproduced herein do not appear in the cited combination.

**I. Claim 1-17.**

Applicants assert that the Matsumura and Tourapis patents, taken alone or in combination, fail to teach or suggest the following limitations of Claims 1 and 10, and by implication dependent claims 2-9 and 11-17, respectively. Claim 1 recites, *inter alia*:

"predicting the at least one missing or corrupted data for the identified macroblock by motion compensating data from both the first previously transmitted picture and a second previously transmitted reference picture."

Claim 10 recites, *inter alia*:

"predicting the at least one missing or corrupted data for the identified macroblock by motion compensating data from the first and second previously transmitted reference pictures in accordance with the determined and scaled motion vector."

CUSTOMER NO.: 24498  
Serial No.: 10/573,928  
Final Office Action Dated: December 22, 2008  
Advisory Action Dated: March 2, 2009

PATENT  
PU030162

The Examiner asserted in the Final Office Action that Matsumura discloses these elements and has pointed to FIG. 12 of that patent for support. However, FIG. 12 of Matsumura clearly shows using one preceding frame (FRAME n-1) and one future frame (FRAME n+1). Although Matsumura does make mention of using multiple future frames (See Matsumura, Col 5, line 57 through Col. 6, line 10), nowhere does Matsumura disclose or suggest using additional *previous* frames.

In addition, applicants note that Tourapis deals with two future frames, and does not deal with preceding frames at all. See Tourapis, FIGS. 3, 6, 8, 9, 14, and 15. In response to this argument, the Examiner asserted the following in the Advisory Action:

"the motion predictor is compensating data from both the previously transmitted picture considered as a reference frame Fr that has already previously transmitted and a second previously transmitted reference picture considered as a preceding frame that is transmitted previously after the first previously transmitted picture...".

Applicants presume that the Examiner refers to the procedures depicted in FIGS. 9 and 13 of Matsumura that depict iterative process, by which Matsumura steps back through previous images until it finds an image with the information it needs.

FIGS. 9 and 13 make clear that Matsumura never predicts data based on more than one previous frame. Referring to FIG. 9 at step A2, Matsumura checks to see if the reference pixel is in error. If not, Matsumura uses that pixel for the prediction. If the pixel is an error at steps A3 and A4, Matsumura goes to the previous frame. Matsumura then loops back to A2 to consider whether the reference pixel in the new frame is in error. At no point does Matsumura take account of multiple previously transmitted pictures in motion compensation.

Applicants assert that Matsumura and Tourapis, taken alone or in combination, fail to disclose or suggest applicants feature of predicting missing or corrupted data for the macroblock by motion compensating data from both the first and second previously transmitted reference pictures, recited in claims 1 and 10 and incorporated by reference in claims 2-9 and 11-17, respectively. Accordingly, Claims 1-17 are patentably distinguish over Matsumura and Tourapis for at least the reasons set forth above. Applicants request reversal of the rejection of Claims 1-17.

CUSTOMER NO.: 24498  
Serial No.: 10/573,928  
Final Office Action Dated: December 22, 2008  
Advisory Action Dated: March 2, 2009

PATENT  
PU030162

## II. Claims 6 and 16

Claims 6 and 16 depend from claims 1 and 10, respectively and each incorporates by reference the features of its respective base claim. Applicants assert that Matsumura and Tourapis, taken alone or in combination, fail to teach or suggest the following limitations of Claims 6 and 16, which each recite:

“selecting results of one of the temporal and spatial-direct modes derivation processes in accordance with at least one *a posteriori* criterion.”

The Examiner asserted in the Final Office Action that Matsumura discloses this element as steps B6 and B7 of FIG. 13. However, Matsumura never deals with spatial processes at all. Furthermore, steps B6 and B7 both make explicit reference to the motion vector *V<sub>d</sub>*, and motion vectors constitute components of *temporal* processes. Because Matsumura does not deal with spatial processes, the reference does not disclose or suggest selecting between spatial and temporal processes, whether in accordance with an *a posteriori* criterion or any other criterion.

In response to this argument, the Examiner asserted in the Advisory Action that Tourapis shows a selection in accordance with an *a posteriori* criterion in block 1306 of FIG. 13, which includes a selection module 1312 that can select between several outputs. However, column 12, lines 5–13 of Tourapis describes using the mode of the received macroblocks to determine which output to use from block 1306.

As discussed above, the present invention selects a process based upon *a posteriori* criteria (e.g., a determination of which process produced better results). In contrast, Tourapis selects an output based upon an *a priori* criterion (i.e., the mode in which the macroblocks were encoded). The Tourapis patent contains no discussion anywhere of selecting between temporal and spatial processes based on an *a posteriori* criterion.

Applicants respectfully assert that Matsumura and Tourapis, taken alone or in combination, fail to disclose or suggest the above-recited limitation of Claims 6 and 16. Accordingly, Claims 6 and 16 patentably distinguish over Matsumura and Tourapis for at least the reasons set forth above. Applicants request reversal of claims 6 and 16.

**CUSTOMER NO.: 24498****Serial No.: 10/573,928****Final Office Action Dated: December 22, 2008****Advisory Action Dated: March 2, 2009****PATENT****PU030162****D. Conclusion**

For the reasons given above, applicants assert that the cited references do not disclose or suggest that features of claims 1-17. Accordingly, applicants request the Board reverse the rejections of Claims 1-17 under 35 U.S.C. § 102(e) and 103(a).

It is believed there is no fee associated with the filing of this Appeal Brief. However if there is a fee, please charge the fee, and/or credit any overpayment, to **Deposit Account No. 07-0832**.

Respectfully submitted,

CRISTINA GOMILA ET AL.

By: 

Robert B. Levy, Attorney for Applicants

Registration No.: 28,234

Telephone No.: 609-734-6820

RBL:pdf

Patent Operations  
Thomson Licensing LLC  
P.O. Box 5312  
Princeton, NJ 08543-5312

July 30, 2009

**CUSTOMER NO.: 24498****Serial No.: 10/573,928****Final Office Action Dated: December 22, 2008****Advisory Action Dated: March 2, 2009****PATENT****PU030162****8. CLAIMS APPENDIX**

1. (Rejected) A method for temporal concealment of at least one of a missing or corrupted macroblocks in a video stream coded in direct mode, comprising the steps of:
  - identifying at least one missing or corrupted macroblock;
  - finding a co-located macroblock in a first previously transmitted picture;
  - determining a co-located motion vector for the co-located macroblock;
  - scaling the determined co-located motion vector in accordance with a picture distance;
  - predicting the at least one missing or corrupted data for the identified macroblock by motion compensating data from both the first previously transmitted picture and a second previously transmitted reference picture in accordance with the scaled co-located motion vector.
2. (Rejected) The method according to claim 1 wherein the at least one missing-or corrupted data is predicted using a temporal-direct mode.
3. (Rejected) The method according to claim 1 wherein the at least one missing or corrupted data is predicted using one of the temporal and spatial-direct modes derivation processes in accordance with at least one criterion selected prior to such predicting.
4. (Rejected) The method according to claim 3 wherein selection of one of the temporal and spatial-direct modes derivation processes is made in accordance with concealment region size.
5. (Rejected) The method according to claim 4 wherein selection of one of the temporal and spatial-direct modes derivation processes is made in accordance a derivation mode of neighboring slices.

**CUSTOMER NO.: 24498**  
**Serial No.: 10/573,928**  
**Final Office Action Dated: December 22, 2008**  
**Advisory Action Dated: March 2, 2009**

**PATENT**  
**PU030162**

6. (Rejected) The method according to claim 1 wherein the at least one missing or corrupted data is predicted by the steps of:
- performing the temporal and spatial-direct modes derivation processes; and
  - selecting results of one of the temporal and spatial-direct modes derivation processes in accordance with at least one a posteriori criterion.
7. (Rejected) The method according to claim 1 further comprising the step of deriving a size of blocks in the first and second pictures to which to apply the co-located motion vector.
8. (Rejected) The method according to claim 1 wherein the results are selected in accordance with a boundary strength value of deblocking in accordance with the ITU H.264 coding standard.
9. (Rejected) The method according to claim 1 wherein the at least one missing or corrupted data is predicted using a temporal-direct mode defined in the ITU H.264 coding standard.
10. (Rejected) A method for temporal concealment of at least one missing or corrupted macroblocks in a video stream coded in direct mode in accordance with the ISO/ITU H. 264 coding standard, comprising the steps of:
- identifying at least one missing or corrupted macroblock;
  - finding a co-located macroblock in a first previously transmitted picture;
  - determining a reference index and a motion vector for the co-located macroblock;
  - scaling the motion vector;
  - selecting a second previously transmitted picture in accordance with the reference index; and
  - predicting the at least one missing or corrupted data for the identified macroblock by motion compensating data from the first and second previously transmitted reference pictures in accordance with the determined and scaled motion vector.

**CUSTOMER NO.: 24498****Serial No.: 10/573,928****Final Office Action Dated: December 22, 2008****Advisory Action Dated: March 2, 2009****PATENT****PU030162**

11. (Rejected) The method according to claim 10 wherein the at least one missing or corrupted data is predicted using a temporal-direct mode defined in the ITU H.264 coding standard.
12. (Rejected) The method according to claim 10 wherein the at least one missing or corrupted data is predicted using a spatial-direct mode defined in the ITU H.264 coding standard.
13. (Rejected) The method according to claim 10 wherein the at least one missing or corrupted data is predicted using one of the temporal and spatial-direct modes derivation processes defined in the ITU H.264 coding standard in accordance with at least one criterion selected prior to such predicting.
14. (Rejected) The method according to claim 10 wherein selection of one of the temporal and spatial-direct modes derivation processes is made in accordance with concealment region size.
15. (Rejected) The method according to claim 14 wherein selection of one of the temporal and spatial-direct modes derivation processes is made in accordance a derivation mode of neighboring slices.
16. (Rejected) The method according to claim 10 wherein the at least one missing or corrupted data is predicted by the steps of:
  - performing the temporal and spatial-direct modes derivation processes defined in the ITU H.264 coding standard; and
  - selecting results of one of the temporal and spatial-direct modes derivation processes in accordance with at least one a posteriori criterion.
17. (Rejected) The method according to claim 16 wherein the results are selected in accordance with a boundary strength value of deblocking in accordance with the ITU H.264 coding standard.

**CUSTOMER NO.: 24498**

**Serial No.: 10/573,928**

**Final Office Action Dated: December 22, 2008**

**Advisory Action Dated: March 2, 2009**

**PATENT**

**PU030162**

**9. RELATED EVIDENCE APPENDIX**

None.

**CUSTOMER NO.: 24498**

**Serial No.: 10/573,928**

**Final Office Action Dated: December 22, 2008**

**Advisory Action Dated: March 2, 2009**

**PATENT**

**PU030162**

**10. RELATED PROCEEDINGS APPENDIX**

None.